

Case #FEL-001P

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Burns et al.
Serial Number: 09/576,720
Filed: May 23, 2000
For: **Nonwoven Laminate Structure**
Group Art Unit: 1771
Examiner: Jenna-Leigh Befumo

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REVISED BRIEF ON APPEAL

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Further to the notice mailed January 14, 2005, Appellants hereby submit a revised appeal brief pursuant to 37 CFR § 1.192.

(i) **REAL PARTY IN INTEREST**

The real party in interest is The Felter's Company located in Roebuck, South Carolina, USA.

(ii) **RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

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(iii) STATUS OF CLAIMS

Claims 25-32 are pending in this application and are being appealed. Claim 25 stands rejected. Claim 26 stands rejected. Claim 27 stands rejected. Claim 28 stands rejected. Claim 29 stands rejected. Claim 30 stands rejected. Claim 31 stands rejected. Claim 32 stands rejected. Claims 1-24 were canceled previously and are not being appealed.

(iv) STATUS OF AMENDMENTS

No amendments have been filed subsequent to final rejection.

(v) SUMMARY OF CLAIMED SUBJECT MATTERIndependent Claim 25

Claim 25 claims a nonwoven composite structure such as represented by reference numeral 10 in Figure 1.

The claimed composite structure has a plurality of layers of nonwoven fiber material as represented by reference numerals 14, 16 and 24 in Figure 1 and described at page 6, line 28 through page 7, line 23.

The layers of nonwoven fiber material comprise a plurality of intermingled staple fibers as illustrated in Figure 1 and described at page 7, line 25 through page 8, line 8.

At least a portion of the layers of nonwoven fiber material are bonded together by discrete layers of adhesive represented by reference numerals 18 and 20 in Figure 1 and described at page 6, line 28 through page 7, line 10; page 8, lines 21 through 28; and page 10, line 29 through page 11, line 20.

The adhesive extends in substantially sandwiching relation between the layers of nonwoven fiber material as illustrated in FIG. 1 and described at page 9, line 29 through page 10, line 6.

The nonwoven composite is characterized by a thickness of not less than about 8 mm and being further characterized by a density of not less than about 0.1 grams per cubic centimeter. Support for the thickness is found at page 13, line 14 through page 14, line 17. The density is disclosed at page 4, lines 17 through 19.

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The layers of nonwoven fiber material are further bonded together by the forced extension of fiber elements substantially across at least two or more of said layers of adhesive as shown in Figure 5 such that a portion of the fiber elements in adjacent layers of the nonwoven fiber material are intermingled with one another and with the adhesive and mechanical entanglement is established between three or more of said layers of nonwoven fiber material as illustrated in Figure 1 and described at page 10, lines 17 through 27.

Independent Claim 26

Claim 26 claims a nonwoven composite structure such as represented by reference numeral 10 in Figure 1.

The claimed composite structure has a plurality of layers of nonwoven fiber material as represented by reference numerals 14, 16 and 24 in Figure 1 and described at page 6, line 28 through page 7, line 23.

The layers of nonwoven fiber material comprise a plurality of intermingled staple fibers as illustrated in Figure 1 and described at page 7, line 25 through page 8, line 8.

At least a portion of the layers of nonwoven fiber material are bonded together by discrete layers of adhesive represented by reference numerals 18 and 20 in Figure 1 and described at page 6, line 28 through page 7, line 10; page 8, lines 21 through 28; and page 10, line 29 through page 11, line 20.

The adhesive extends in substantially sandwiching relation between the layers of nonwoven fiber material as illustrated in FIG. 1 and described at page 9, line 29 through page 10, line 6.

The nonwoven composite is characterized by a thickness of not less than about 6.3 mm and being further characterized by a density of not less than about 0.1 grams per cubic centimeter. Support for the thickness is found at page 13, lines 14 through 18. The density is disclosed at page 4, lines 17 through 19.

The layers of nonwoven fiber material are further bonded together by the forced extension of fiber elements substantially across at least a portion of the layers of adhesive between adjacent

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layers of the nonwoven fiber material such that a portion of the fiber elements in adjacent layers of the nonwoven fiber material are intermingled with one another and with the adhesive and mechanical entanglement is established between adjacent layers of the nonwoven fiber material as illustrated in Figure 1 and described at page 10, lines 17 through 27.

Means Plus Function or Step Plus Function Recitals

No independent claim or dependent claim involved in the appeal includes a "means plus function" or "step plus function" recital.

(vi) GROUND FOR REJECTION:

Claims 25-32 have been rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent 6,287,407 to Stein et al. in view of U.S. Patent 3,683,921 to Brooks et. al. The Examiner has argued that the primary reference to Stein teaches intermingling of fiber elements between layers and that it would be obvious to utilize multiple adhesive layers in Stein. It is the interpretation of the primary reference and the conclusion of obviousness based on that interpretation that is presented for review.

(vii) ARGUMENT:

All claims currently stand rejected as being obvious over U.S. Patent 6,287,407 to Stein et al. in view of U.S. Patent 3,683,921 to Brooks. All outstanding rejections on the basis of Stein et al. as the primary reference are respectfully traversed.

Each of the claims positively recites that a portion of the fiber elements in adjacent layers of the nonwoven fiber material are intermingled with one another and with the adhesive. Conversely, as best understood, the primary reference to Stein specifically teaches away from such multi-layer intermingling and would likely be rendered unsuitable for its intended purpose if

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this characteristic were introduced. Accordingly, it is respectfully submitted that the references of record do not provide the requisite *prima facie* case of obviousness.

MPEP section 2143.01 indicates that even if references can be combined or modified in the manner proposed, a *prima facie* case obviousness is not established unless prior art also suggests the desirability of the proposed modification. *In re Mills*, 916 F.2d 680 16 USPQ2d 1430 (Fed. Cir. 1990). In this regard a prior art reference must be considered in its entirety, including portions that would lead away from the claimed invention. The MPEP further states that if the proposed combination or modification would change the principle of operation of the prior art invention being modified, or would render the prior art invention being modified unsatisfactory for its intended purpose, there is no suggestion or motivation to make the proposed modification.

In the present case the primary reference to Stein et al. teaches specifically against the mixture of fibers between layers. In this regard, the primary reference advocates using fork or crown needles with a depth such that when piercing through the layered structure they completely fill up with fibers for the base fabric facing the needles (i.e. the top layer). In this way the needles push unmixed pure fibers to the reverse side. This is done with the express purpose of avoiding intermixture of fibers from layers of different colors so as to provide a sharp pattern on the back. While such push-through needling may provide a degree of structure to the needed material, it does not do so by intermingling. To the contrary, if the fibers in the adjacent layers of Stein et al. were intermingled (i.e. blended) with one another across the layer boundary the colors would be mixed thereby reducing the contrast expressly against the teachings of the reference and fundamentally changing the principle of operation.

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Appellants also respectfully submit that it would be non-obvious to modify the primary reference to cause intermingling of fiber elements with adhesive. As best understood, a fundamental goal of the invention in the primary reference to Stein et al. is carry out needling in such a manner such that columns of unmixed pure fibers extend across layers to form patterns on an opposite side from needle insertion. To achieve this, crown or fork needles that fill completely with fiber from the first layer are used. Intermingling fiber elements with adhesive in the invention of Stein et al. would cause a portion of the adhesive to be carried to the surface being patterned thereby essentially diluting the purity of the fibrous columns being pushed through the laminate. Of course, such dilution would be contrary to the express teachings of the primary reference.

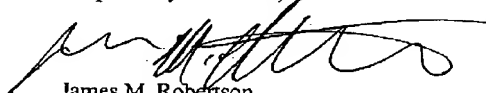
In light of the fact that the primary reference appears to teach expressly against the invention as presently claimed, it is respectfully submitted that an appropriate *prima facie* case of obviousness has not been established. In the absence of an appropriate rejection the claims should be allowed.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that the cited art does not support a continued obviousness rejection. Therefore, reversal of all rejections directed to the identified claims is courteously solicited.

Respectfully submitted,

February 11, 2005



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CLAIMS APPENDIX**CLAIMS ON APPEAL:**

25. A nonwoven composite structure comprising: a plurality of layers of nonwoven fiber material comprising a plurality of intermingled staple fibers, at least a portion of said layers of nonwoven fiber material being bonded together by a plurality of discrete layers of adhesive extending in substantially sandwiching relation between said layers of nonwoven fiber material, the nonwoven composite being characterized by a thickness of not less than about 8 mm and being further characterized by a density of not less than about 0.1 grams per cubic centimeter said layers of nonwoven fiber material being further bonded together by the forced extension of fiber elements substantially across at least two or more of said layers of adhesive such that a portion of the fiber elements in adjacent layers of the nonwoven fiber material are intermingled with one another and with said adhesive and mechanical entanglement is established between three or more of said layers of nonwoven fiber material.

26. A nonwoven composite structure comprising: a plurality of layers of nonwoven fiber material comprising a plurality of intermingled staple fibers, at least a portion of said layers of nonwoven fiber material being bonded together by one or more discrete layers of adhesive extending in substantially sandwiching relation between said layers of nonwoven fiber material, the nonwoven composite being characterized by a thickness of not less than about 6.3 mm and being further characterized by a density of not less than about 0.1 grams per cubic centimeter said layers of nonwoven fiber material being further bonded together by the forced extension of fiber elements substantially across at least a portion of said layers of adhesive between adjacent layers of said nonwoven fiber material such that a portion of the fiber elements in adjacent layers of the nonwoven fiber material are intermingled with one another and with said adhesive and mechanical entanglement is established between adjacent layers of said nonwoven fiber material.

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27. The invention according to claim 26, wherein said nonwoven composite is characterized by a density in the range of about 0.20 to about 0.55 grams per cubic centimeter.

28. The invention according to claim 26, wherein the staple fibers comprising said nonwoven fiber material are selected from the group consisting of; polyester fibers, acrylic fibers, acetate fibers, wool fibers, aramid fibers, polypropylene fibers, rayon fibers and blends thereof and wherein said staple fibers are characterized by a linear density in the range of about 2 denier to about 15 denier have an average length in the range of about 50 mm to about 105 mm.

29. The invention according to claim 26, wherein said one or more layers of adhesive comprise a dry adhesive.

30. The invention according to claim 29, wherein said dry adhesive comprises a meltable scrim fabric.

31. The invention according to claim 29, wherein said one or more layers of adhesive is activated in a selected geometric pattern such that a discontinuous bonding pattern is formed between adjacent layers of nonwoven fiber material.

32. The invention according to claim 29, wherein said one or more layers of adhesive comprises a scrim fabric of spun bonded construction.